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54 Sheet of roofcovering material and method to apply this sheet in or as a roofcovering.

57 Sheet of roofcovering material comprising a porous
 base layer with apertures distributed over its surface, and
 which base layer, at its upper side, is provided with a liquid-
 and/or vapour tight coating, onto which a bituminous
 adhering layer or a bituminous top layer has been applied.

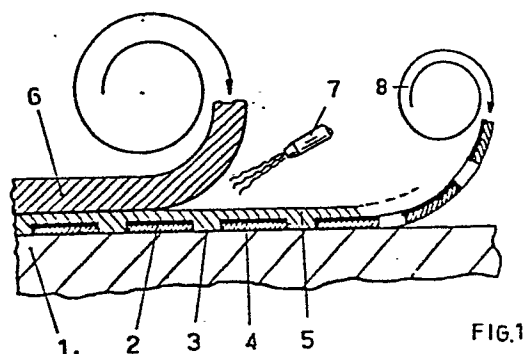


FIG.1

Sheet of roofcovering material and method to apply this sheet in or as a roofcovering.

5 The present invention relates to a sheet of roofcovering material, comprising a base layer provided with apertures equally spaced over its surface.

Such a sheet is known in which the base layer by immersion is impregnated with bitumen and, on both sides, is provided with a bituminous coating.

10 In applying the sheet, the same is unrolled onto and over the roof plane, which may have been constructed from various materials, such as for instance wood or concrete, and after which hot and molten bitumen is spread out onto the sheet and caused to pass through the apertures to come into touch with and to adhere the sheet to the roof plane.
15 After applying the sheet onto the roof plane, a top layer of bituminous material is unrolled onto and adhered to the upper side of the sheet to complete the roofcovering.

20 The known sheet of roofcovering material as described here above has the disadvantage of being impermeable for liquid and vapour, so that moisture enclosed between the sheet and the roof plane only can escape underneath the sheet to the surroundings and for which reason a granular material, such as fine gravel, may be applied underneath the sheet to keep it locally in spaced relationship with respect to the roof
25 plane.

However, such granular material rather easily may penetrate into the roofcovering so that there is no way out any more for moisture enclosed underneath the sheet and which moisture, when being warmed up by sunshine, will cause the formation
30 of blisters in the roofcovering.

Another disadvantage of the sheet known from the prior art is, that the hot and molten bitumen spread out onto the sheet to adhere it to the roof plane has to be cooled down

before the top layer may be unrolled onto and over the sheet to complete the roofcovering.

It is an object of the present invention to obviate these disadvantages of the known sheet of roofcovering material.

- 5 According to the present invention the sheet is characterized in that the base layer has a porous structure, particularly formed by glass fibres or glass fibre mat , the upper side of the porous base layer being provided with a liquid-and/or vapourtight coating, over which coating a bituminous adhesive
10 layer or a bituminous top layer has been applied, such, that when heating the sheet when the same has been applied onto a roof plane, the molten bitumen from the adhesive- or top layer will pass through the apertures of the base layer to come into touch with and to adhere the base layer to the roof
15 plane, during which the coating prevents the molten bitumen from penetrating the porous base layer.

- As distinct from the prior art sheet, the invented sheet, when applied in a roofcovering provides an immediately above the roof plane situated porous layer through which moisture in
20 the form of liquid or vapour may escape to the surroundings by which the forming of blisters in the roofcovering is prevented.

- The apertures in the base layer may be left open by the adhesive- or top layer, or may be partly or completely filled up with
25 the bituminous material from the adhesive- or top layer.

The liquid- and/or vapourtight coating of the upper side of the base layer may consist of various materials.

According to a feature of the invented sheet, the coating consists of a heat-resistant, preferably fire-proof material.

- 30 In an embodiment of the invented sheet, the coating has been applied loosely or in spaced relationship over the base layer.

The invented sheet may be applied as or in a roofcovering in various manners.

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In a favourable application, the invented sheet is unrolled onto the roof plane, after which onto and over it, the water-tight bituminous top layer is unrolled, during which the upper side of the adhesive bituminous layer of the sheet and the lower
5 side of the top layer are heated immediately upstream of their junction to partly melt the bituminous material on both layers and then adhering both layers by continued unrolling the top layer onto the base layer, during which operation the base layer is adhered to the roof plane by the molten bitumen flowing
10 out through the apertures of the base layer onto the roof plane.

In another application of the invented sheet which then is provided with a thicker, bituminous top layer, the sheet is unrolled onto the roof plane while its lower surface immediately upstream of its junction with the roof plane
15 is heated to melt the bitumen and to cause it to flow out through the apertures of the base layer to come into touch with and to adhere the sheet to the roof plane.

The invented sheet may be manufactured in various manners. So, the base layer may be provided at its upper side with
20 a liquid- and/or vapourtight coating, onto which molten bitumen is sprayed to form onto the coating the adhesive bituminous layer or the thicker bituminous top layer and which latter might be provided with an imbedded reinforcement web.

25 To that end, favourably an apparatus may be used which is provided with a movable supporting surface, preferably a conveyer belt, with means to bring the base layer from a storage roll onto the supporting surface, with means for feeding means to the path of movement of the base layer to
30 apply a liquid- and/or vapourtight coating onto the upper side of the base layer, with means for feeding molten bitumen onto the coating, with means for cooling down the applied bitumen and with means to receive the completed sheet from the supporting surface.

35 In the accompanying drawing two embodiments of the sheet according to the invention and their application in or as a roofcovering are illustrated by way of example.

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Fig. 1 is a sectional view of the application of the sheet onto which an adhering layer of bituminous material is applied;

5 fig. 2 is a sectional view of the application of the sheet as a complete roofcovering in which the base layer carries a thicker bituminous top layer.

As is shown in fig. 1, the sheet is unrolled from the roll 8 onto the roof plane 1 to form a roofcovering thereon. The sheet consists of a porous base layer 2 of glass fibre mat, which is provided with apertures 3 equally spaced or distributed over its surface. Onto the base layer 2 a liquid-tight coating 4 is arranged, over which coating the bituminous adhesive layer 5 was applied. After unrolling the sheet 2,4,5 onto the roof plane, the bituminous top layer 6 is unrolled onto the sheet 2,4,5 while, at the same time, the lower side of the top layer 6 and the upper side of the sheet 2,4,5 are heated immediately upstream of their junction by means of the burner 7. By this heating the bitumen of the adhesive layer is molten and flows through the apertures 3 to come into touch with and to adhere the sheet to the roof plane 1, while, at the same time, the adhesive bituminous layer 5 at its upper side and the top layer 6 at its lower side are molten to adhere to each other in continued unrolling the top layer 6 onto the sheet 2,4,5.

25 As in shown in fig. 2, the porous base layer provided with a liquidtight coating 4 is further provided with a thicker top layer 6, and which, together with the base layer 2 is unrolled onto the roof plane.

During that operation, the base layer 2 is heated at its lower side, causing the bitumen of the top layer to melt and to flow through the apertures 3 to come into touch with and to adhere the sheet to the roof plane.

C L A I M S

1. Sheet of roofcovering material, comprising a base layer and which is provided with apertures distributed over its surface, characterized in that the base layer has a porous structure, particularly formed by glass fibres or glass fibre mat , the upper side of the base layer being provided with a liquid- and/or vapourtight coating and over which coating a bituminous adhesive layer or a bituminous top layer has been applied, such, that in heating the sheet applied onto a roof plane, the molten bitumen from the adhesive- or top layer will pass through the apertures of the base layer to come into touch with and to adhere the base layer to the roof plane, during which the coating prevents the molten bitumen from penetrating the porous base layer.
2. Sheet as claimed in claim 1, characterized in that the apertures at least partly are filled up or closed by the bituminous material from the adhesive- or top layer.
3. Sheet as claimed in claim 1, characterized in that the coating consists of a heat-resistant or fire-proof material, particularly a mineral material.
4. Sheet as claimed in claim 1, 2 or 3, characterized in that the coating has been applied loosely or in spaced relationship over the base layer.
5. Method of applying a roofcovering onto a roof plane by using the sheet as claimed in one of the preceding claims, characterized in that the sheet is applied onto the roof plane after which a bituminous top layer is unrolled over the sheet, during which the upper side of the adhesive layer of the sheet and the lower side of the top layer are heated upstream of their junction to partly melt the bituminous material of both layers and adhering both layers to each other, during which operation the base layer is adhered to

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the roof plane by the molten bitumen flowing through the apertures onto the roof plane.

6. Method of applying a roofcovering onto a roof plane by using the sheet as claimed in one of the preceding claims, characterized in that the sheet comprising a bituminous top layer is unrolled onto the roof plane while its lower surface is heated upstream of its junction with the roof plane to melt the bitumen and to cause it to flow out through the apertures to come into touch with and to adhere the sheet to the roof plane.
7. Apparatus for manufacturing the sheet as claimed in one of the preceding claims, characterized in that this apparatus is provided with a movable supporting surface, preferably a conveyer belt, with means to bring the base layer from a storage roll onto the supporting surface, with means for feeding means to the path of movement of the base layer to apply a liquid- and/or vapourtight coating onto the upper side of the base layer, with means for feeding molten bitumen onto the coating, with means for cooling down the applied bitumen and with means to receive the completed sheet from the supporting surface.

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